

REMARKS

The present Response is supplemental to the Submission submitted August 19, 2010. Applicants have not received notice that the Submission submitted August 19, 2010 has been entered into the record. Accordingly, the amendments in the present Supplemental Response include those amendments of the Submission submitted August 19, 2010.

The specification is amended herein to correct an error in translation of the Japanese-language PCT application. Support for the amendment is found in the PCT application as originally filed. As evidence of the foregoing, submitted herewith as Exhibit A is a translation of the paragraph in question in the PCT application, along with a Verification of Translation statement. Accordingly, no new matter is added by the amendment to the specification.

Claims 1, 12, 27, 32, 34 and 35 are amended herein. Support for the amendment to Claims 1, 12, 27 and 32 is found in original Claim 7, and throughout the specification. Support for the amendment to Claim 34 is found in the specification, for example, at page 8, lines 10-13. Support for the amendment to Claim 35 is found in the specification, for example, at page 8, line 25, through page 9, line 3. Accordingly, the amendments to the claims do not add new matter.

Claim 7 is canceled herein without prejudice to, or disclaimer of, the subject matter contained therein. Applicants maintain that the cancellation of a claim makes no admission as to its patentability and reserve the right to pursue the subject matter of the canceled claim in this or any other patent application.

Upon entry of the new claims, Claims 1, 3-5, 8, 10, 12, 27-30 and 32-35 are pending.

Objection to Drawings in Exhibit 1

The Office Action objects to the drawings submitted in Applicants' previous response, labeled "Exhibit 1" because they were unaccompanied by a Declaration and because the image quality of the figures was low. Insofar as the previously-submitted evidence was not properly presented and/or unclear, Applicants no longer rely on the previously-submitted evidence. Applicants submit herewith a new Declaration which is discussed in more detail below.

Rejection of Claims 34 and 35 under 35 U.S.C. §112, second paragraph

Claims 34 and 35 are rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to specify units.

Claims 34 and 35 are amended herein to specify units. In view of the amendment to the claims, Applicants respectfully request removal of this ground of rejection.

Rejection of Claims 1, 3-5, 10, 12, 27-30 and 32-35 under 35 U.S.C. §103 and Rejection of Claims 7 and 8 under 35 U.S.C. §103

Claims 1, 3-5, 10, 12, 27-30 and 32-35 are rejected under 35 U.S.C. §103 as being obvious over Kuriu (WO 00/56548) in view of Yamamoto (JP 11-199741) and Toyozumi (JP 2002-338770). Claims 7 and 8 are rejected under 35 U.S.C. §103 as being obvious over Kuriu (WO 00/56548) in view of Yamamoto (JP 11-199741), Toyozumi (JP 2002-338770) and Matsui (JP 2002-248721).

Claims 1, 12, 27 and 32 are amended to incorporate the elements of now-canceled Claim 7. Accordingly, the rejections as applied to Claims 1, 3-5, 10, 12, 27-30 and 32-35 and Claims 7 and 8 will be addressed herein.

Applicants respectfully submit that the claims are non-obvious over the cited references because the presently claimed invention provides results that are unexpected over any combination of the teachings of the references.

Claims 1, 12, 27 and 32 presently recite, *inter alia*, that the at least one polyamide layer comprises a phenol-based antioxidant. The Office Action states that Matsui teaches a layered film containing a polyamide layer suitable for packing material subject to retort treatment, and further it discloses the addition of a phenolic antioxidant to the polyamide. The Office Action concludes that, it would have been obvious for one of ordinary skill in the art to add the phenolic antioxidant to the laminated polyamide layer obtained from Kuriu, Yamamoto and Toyozumi. However, even if the phenolic antioxidant is added to the laminated polyamide layer obtained from Kuriu, Yamamoto and Toyozumi, the person of ordinary skill in the art would not have expected the superior properties of the presently claimed invention.

In contrast, Applicants have found that the presently claimed invention has a remarkable effect of transparency retention after the retort treatment. In particular, Applicants have found

that the use of a phenol-based antioxidant achieves this remarkable result, where such effect was substantially lower for other types of antioxidants. As evidence exemplifying Applicants' observations of the superior effects of phenol-based antioxidants, submitted herewith as Exhibit B is a Declaration by Hiroyuki Yoshizaki.

Hiroyuki Yoshikazi is an employee of the Assignee of the present application, Gunze Limited, and, as demonstrated in the Declaration, Mr. Yoshikazi possesses the appropriate technical background and training to have coordinated the experiments discussed in the Declaration, and to comment on the results of the experiments.

The Yoshizaki Declaration states that experiments were performed to confirm that a reduction in transparency measured using haze values before and after retort treatment differs between the case where a phenol-based antioxidant was added to a polyamide layer and where an antioxidant other than the phenol-based antioxidant was added. The experiments were performed for three antioxidants: pentaerythrityl tetrakis[3-(3,5-di-t-butyl-4-hydroxyphenyl) propionate] (phenol-based antioxidant); tris(2,4-di-t-butylphenyl) phosphite (phosphorus-based antioxidant); and pentaerythrityl tetrakis(3-laurylthiopropionate) (sulphur-based antioxidant). In the experiments, one of each of the antioxidants (1,000 ppm each) was added to polyamide 6, and single-layer films with a thickness of 15 μm each were produced based on the production conditions of Example 1 of the present application. Single-layer films were used for the purpose of clearly demonstrating the effect of different antioxidants in the present experiment. Each resulting film was subjected to a retort treatment at 121°C x 30 minutes, and the haze values before and after the retort treatment were measured.

The results revealed that use of a phosphorus-based antioxidant or a sulphur-based antioxidant yielded a transparency retention of 87% and 88%, respectively. In contrast, use of a phenol-based antioxidant yielded a transparency retention of 100%. Thus, use of a phenol-based antioxidant showed a superior ability to retain transparency after the retort treatment relative to use of other antioxidant compounds.

None of Kuriu, Yamamoto and Toyozumi teaches the benefits of incorporating antioxidants. Kuriu teaches an antioxidant as an optional additive; but does not teach any added benefit or any reason for incorporating the antioxidant. *See* Kuriu at column 2, lines 35-39. Only Matsui teaches the use of an antioxidant to lessen the effect strength reduction of the film after

air retort treatment. See Matsui, at paragraphs [0019], [0058] and [0061]. However, Matsui is silent regarding the haze reduction that results by incorporating the recited phenolic antioxidant into a polyamide film, and in particular does not teach the improved effect that Applicants have discovered. Although Matsui teaches the use of an antioxidant to lessen the effect strength reduction of the film after air retort treatment, there is no evidence that the superior haze suppression effects of Applicants' invention would be expected in view of the teachings of Matsui. If anything, Tables 5 and 6 in the present specification provide evidence that these two effects are not mutually related. Accordingly the decreased impact strength reduction taught by Matsui would not lead one of ordinary skill to expect the superior haze suppression effects resultant from the presently claimed invention.

Therefore, even if the person skilled in the art would have attempted to add the phenolic antioxidant to the polyamide layer obtained from Kuriu, Yamamoto and Toyozumi according to the teachings of Matsui, the only predictable result would be decreased impact strength reduction upon retort. The superior haze suppression effect of the presently claimed invention would not have been predicted from the teachings of Matsui, alone or in combination with the remainder of the cited references.

Consequently, the presently claimed invention possesses superior properties that are unexpected over the teachings of the cited references. Accordingly, the presently claimed invention is non-obvious over the cited references.

Rejection of Claim 3 under 35 U.S.C. §103

Claim 3 is rejected under 35 U.S.C. §103 as being obvious over Kuriu (WO 00/56548) in view of Yamamoto (JP 11-199741), Toyozumi (JP 2002-338770) and Tokoh (U.S. Pat. No. 5,428,094).

Claim 3 is non-obvious for at least the reasons provided above. In particular, Claim 3 depends from Claim 1, and Kuriu, Yamamoto and Toyozumi cannot be combined to render Claim 1 obvious. Tokoh does not teach the improved haze reduction properties resultant from the incorporation of a phenolic antioxidant into a polyamide-based multilayer film. As such Tokoh does not teach that which is lacking in the combination of Kuriu, Yamamoto and Toyozumi. Accordingly, no combination of the cited references can render Claim 3 obvious. In

Application No.: 10/560,951
Filing Date: October 6, 2006

view of the above, Applicants respectfully request reconsideration and removal of the above obviousness rejection of Claim 3.

Rejection of Claim 32 under 35 U.S.C. §103

Claim 32 is rejected under 35 U.S.C. §103 as being obvious over Kuriu (WO 00/56548) in view of Yamamoto (JP 11-199741), Toyozumi (JP 2002-338770) and Tanaka (JP 2002-172742).

Claim 32 is non-obvious for at least the reasons provided above. In particular, Kuriu, Yamamoto and Toyozumi cannot be combined to render Claim 32 obvious. Tanaka does not teach the improved haze reduction properties resultant from the incorporation of a phenolic antioxidant into a polyamide-based multilayer film. As such Tanaka does not teach that which is lacking in the combination of Kuriu, Yamamoto and Toyozumi. Accordingly, no combination of the cited references can render Claim 32 obvious. In view of the above, Applicants respectfully request reconsideration and removal of the above obviousness rejection of Claim 32.

Rejection of Claim 27 under 35 U.S.C. §103

Claim 27 is rejected under 35 U.S.C. §103 as being obvious over Kuriu (WO 00/56548) in view of Yamamoto (JP 11-199741), Toyozumi (JP 2002-338770) and Shibuya (JP 06-345919).

Claim 27 is non-obvious for at least the reasons provided above. In particular, Kuriu, Yamamoto and Toyozumi cannot be combined to render Claim 27 obvious. Shibuya does not teach the improved haze reduction properties resultant from the incorporation of a phenolic antioxidant into a polyamide-based multilayer film. As such Shibuya does not teach that which is lacking in the combination of Kuriu, Yamamoto and Toyozumi. Accordingly, no combination of the cited references can render Claim 27 obvious. In view of the above, Applicants respectfully request reconsideration and removal of the above obviousness rejection of Claim 27.

Rejection of Claims 1, 3-5, 10, 12, 27-30 and 32-35 under 35 U.S.C. §103 and Rejection of Claims 7 and 8 under 35 U.S.C. §103

Application No.: 10/560,951
Filing Date: October 6, 2006

Claims 1, 3-5, 10, 12, 27-30 and 32-35 are rejected under 35 U.S.C. §103 as being obvious over Kuriu (WO 00/56548) in view of Yamamoto (JP 11-199741) and Sugiura (JP 10151714).

Claims 7 and 8 are rejected under 35 U.S.C. §103 as being obvious over Kuriu (WO 00/56548) in view of Yamamoto (JP 11-199741), Sugiura (JP 10151714) and Matsui (JP 2002-248721).

Claims 1, 3-5, 7, 8, 10, 12, 27-30 and 32-35 are non-obvious for at least the reasons provided above. In particular, Kuriu and Yamamoto cannot be combined to render Claims 1, 12, 27 or 32 obvious. Sugiura does not teach the improved haze reduction properties resultant from the incorporation of a phenolic antioxidant into a polyamide-based multilayer film. As such Sugiura does not teach that which is lacking in the combination of Kuriu and Yamamoto. Accordingly, no combination of the cited references can render obvious Claims 1, 12, 27, or 32, or claims dependent therefrom. In view of the above, Applicants respectfully request reconsideration and removal of the above obviousness rejection of Claims 1, 3-5, 7, 8, 10, 12, 27-30 and 32-35.

Rejection of Claim 3 under 35 U.S.C. §103

Claim 3 is rejected under 35 U.S.C. §103 as being obvious over Kuriu (WO 00/56548) in view of Yamamoto (JP 11-199741), Sugiura (JP 10151714) and Tokoh (U.S. Pat. No. 5,428,094).

Claim 3 is non-obvious for at least the reasons provided above. In particular, Claim 3 depends from Claim 1, and Kuriu, Yamamoto and Sugiura cannot be combined to render Claim 1 obvious. Tokoh does not teach the improved haze reduction properties resultant from the incorporation of a phenolic antioxidant into a polyamide-based multilayer film. As such Tokoh does not teach that which is lacking in the combination of Kuriu, Yamamoto and Sugiura. Accordingly, no combination of the cited references can render Claim 3 obvious. In view of the above, Applicants respectfully request reconsideration and removal of the above obviousness rejection of Claim 3.

Rejection of Claim 32 under 35 U.S.C. §103

Application No.: 10/560,951
Filing Date: October 6, 2006

Claim 32 is rejected under 35 U.S.C. §103 as being obvious over Kuriu (WO 00/56548) in view of Yamamoto (JP 11-199741), Sugiura (JP 10151714) and Tanaka (JP 2002-172742).

Claim 32 is non-obvious for at least the reasons provided above. In particular, Kuriu, Yamamoto and Sugiura cannot be combined to render Claim 32 obvious. Tanaka does not teach the improved haze reduction properties resultant from the incorporation of a phenolic antioxidant into a polyamide-based multilayer film. As such Tanaka does not teach that which is lacking in the combination of Kuriu, Yamamoto and Sugiura. Accordingly, no combination of the cited references can render Claim 32 obvious. In view of the above, Applicants respectfully request reconsideration and removal of the above obviousness rejection of Claim 32.

Rejection of Claim 27 under 35 U.S.C. §103

Claim 27 is rejected under 35 U.S.C. §103 as being obvious over Kuriu (WO 00/56548) in view of Yamamoto (JP 11-199741), Sugiura (JP 10151714) and Shibuya (JP 06-345919).

Claim 27 is non-obvious for at least the reasons provided above. In particular, Kuriu, Yamamoto and Sugiura cannot be combined to render Claim 27 obvious. Shibuya does not teach the improved haze reduction properties resultant from the incorporation of a phenolic antioxidant into a polyamide-based multilayer film. As such Shibuya does not teach that which is lacking in the combination of Kuriu, Yamamoto and Sugiura. Accordingly, no combination of the cited references can render Claim 27 obvious. In view of the above, Applicants respectfully request reconsideration and removal of the above obviousness rejection of Claim 27.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not

Application No.: 10/560,951
Filing Date: October 6, 2006

reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

CONCLUSION

In view of the above, Applicants respectfully maintain that claims are patentable and request that they be passed to issue. Applicants invite the Examiner to call the undersigned if any remaining issues might be resolved by telephone.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: November 19, 2010

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111710

Exhibit A

U.S. Patent Application No. 10/560,951
Attorney Docket No. SAEG124.004APC

VERIFICATION OF TRANSLATION

I, Tomoko MAEDA, at Saegusa Intellectual Property Institute, hereby declare that I am the translator of the English language document attached and certify that, to the best of my knowledge and belief, the attached document is a true and correct English translation of the Comparative Example 4.

Date: October 28, 2010

Signature: Tomoko Maeda

Translation of the paragraph
in question into English

Comparative Example 4

A 3-layer polyamide-based film was obtained in a similar manner as in Example 1 except that the makeup of each polyamide layer was: nylon-6 (87 parts by weight), aromatic nylon (10 parts by weight), modified ethylene-vinyl acetate copolymer (2.5 parts by weight) and ethylene-methacrylic acid copolymer ionomer (0.5 parts by weight), with no antioxidant being used. The thickness of each layer was 6.0 μm /5.0 μm /6.0 μm in the order of polyamide layer/EVOH layer/polyamide layer, respectively.

Exhibit B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Osamu NIWA et al.
App. No : 10/560,951
Filed : October 6, 2006
For : POLYAMIDE-BASED MULTILAYER
FILM
Examiner : KAHN, Rachel
Art Unit : 1796

DECLARATION OF HIROYUKI YOSHIZAKI UNDER 37 C.F.R. 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I, **Hiroyuki Yoshizaki**, hereby declare and state:

1. THAT I am a citizen of Japan:
2. THAT I graduated from Shizuoka University with a Bachelor's Degree in the Department of Engineering in 1998;
3. THAT I have been employed by Gunze Limited, the Assignee of the present application (U.S. Serial No. 10/560,951), since September 10, 2004, where I am a member of the technical development staff of a section, with responsibility for the development of polyamide based film;
4. THAT the following experiments were carried out under my direction and supervision:
 - 4.1. Purpose of the Experiments
To confirm that a reduction in transparency measured using haze values before and after retort treatment differs between the case where a phenol-

based antioxidant was added to a polyamide layer and where an antioxidant other than the phenol-based antioxidant was added.

4.2. Experimental Conditions

One of each of the antioxidants listed below (1,000 ppm each) was added to polyamide 6, and single-layer films with a thickness of 15 μm each were produced based on the production conditions of Example 1 of the present application. Single-layer films were used for the purpose of clearly demonstrating the effect of different antioxidants in the present experiment. Each resulting film was subjected to a retort treatment* at 121°C x 30 minutes, and the haze values before and after the retort treatment were measured.

*The retort treatment was performed using an Autoclave LM36A manufactured by Hirayama Manufacturing Corp.

4.3. Antioxidants

- ① Phenol-based antioxidant · · · Irganox 1010 (manufactured by BASF)
Pentaerythrityl tetrakis[3-(3,5-di-*t*-butyl-4-hydroxyphenyl) propionate]
- ② Phosphorus-based antioxidant · · · Irgafos 168 (manufactured by BASF)
Tris(2,4-di-*t*-butylphenyl) phosphite
- ③ Sulphur-based antioxidant · · · Sumilizer TPD (manufactured by Sumitomo Chemical Co., Ltd.)
Pentaerythrityl tetrakis(3-laurylthiopropionate)

4.4. Experimental Results

Measured item: Haze value (unit:%)

	Haze value Before Retort Treatment (unit:%)	Haze value After Retort Treatment (unit:%)	Transparency Retention
①	5.0	5.0	100%
②	5.3	6.0	88%
③	5.3	6.1	87%

As shown above, 100% of the transparency was maintained only when a phenol-based antioxidant was used.

5. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like to made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: November 11, 2010

By: HiroYuki Yoshizaki
HiroYuki Yoshizaki